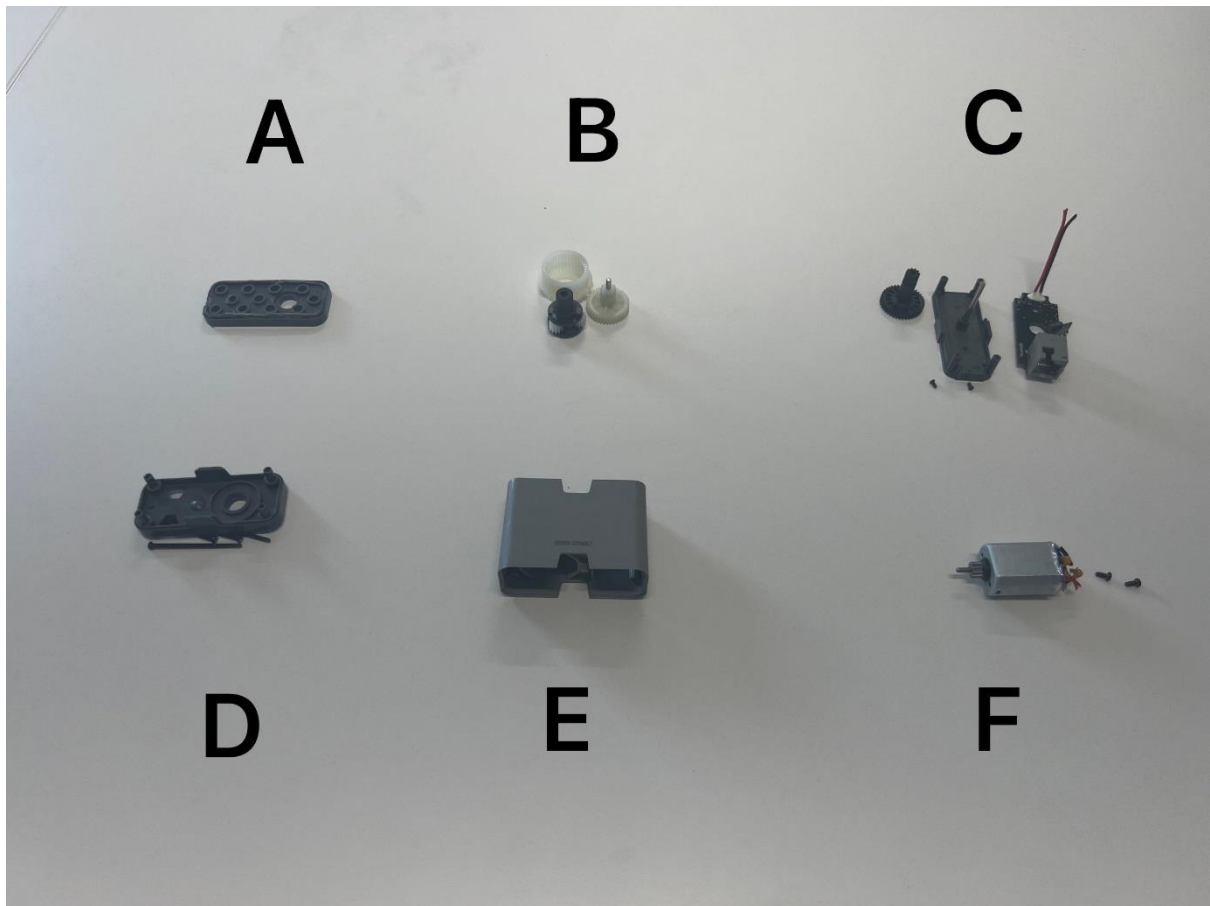


Reverse Engineering of Vex IQ Smart Motor

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NewAI decided to disassemble a smartmotor. We did this because when we were training, we never put down the arm at the top, making the motor exhausted, eventually, the motor stopped working and we had to take it off. We decided to dispatch it, since were curious about what was inside. Our coach told us that due to safety reasons, he would be operating it for risky tools only.



These are the tools/ materials we used to disassemble the smart motor.

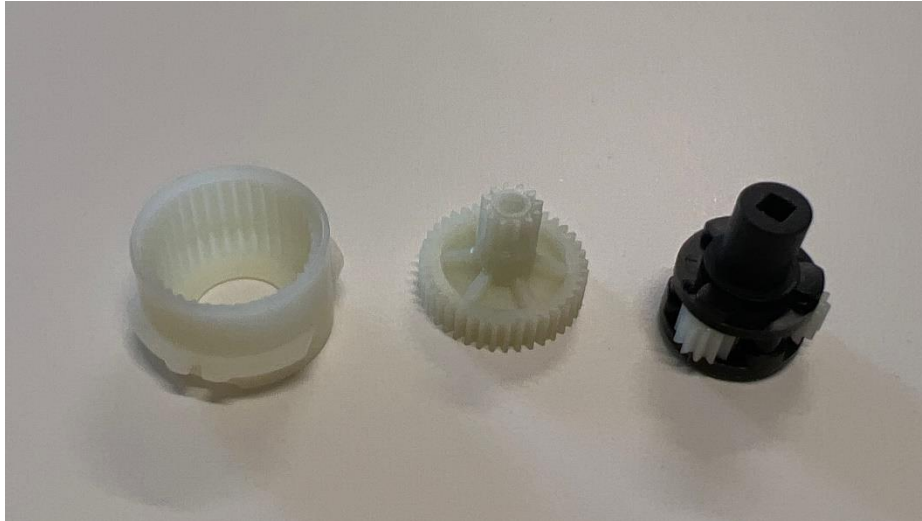


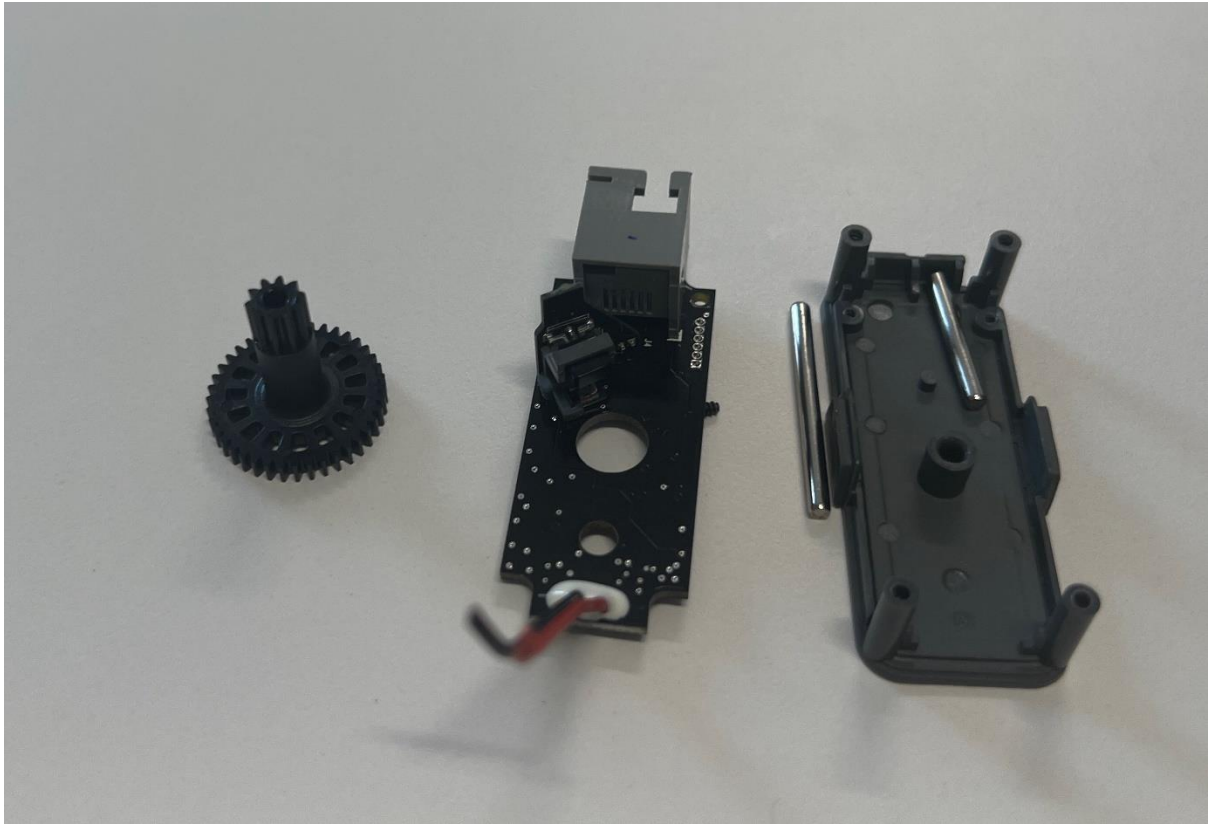
Part A:

Part A can be connected to other VEX parts, allowing it to control arms, wheels, etc.

Part B:

Part B has 3 main parts: 2 white and 1 white and black; one part for gear, one for motor and the middle one with black & white is like a speed controller. The black one uses gear ratio to control the motor.





Part C:

Part C has 5 parts: 1 black gear, it is connected directly to the motor from Part B, 3 small screws used for another part (Part E), 2 metal rod, used also for the gears, another part with the red & black wire with 2 chips that can control the power of the motor precisely with a series number of the small one as 228-2560-921 and the large one as 228-2560-911: a small & big one and one part that could be connected to Part E.



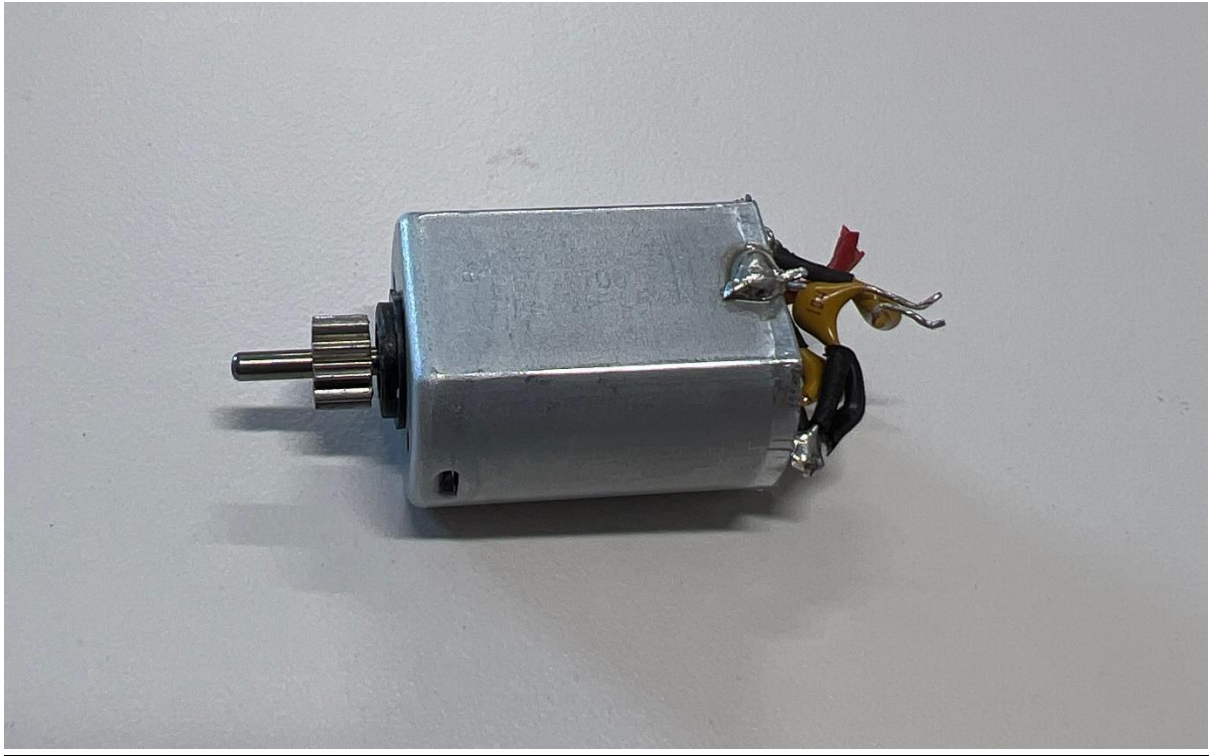
Part D:

Part D is the cover for the other parts and the top protector with long screws to keep it firm.



Part E:

Part E is the motor's protector and has a series number: 228-2560 & 21241AG.



Part F:

Part F is a brush motor is a type of electric motor that uses brushes to conduct current to the rotor, creating a magnetic field that causes the rotor to rotate. It has a series number: FF-130SH-14230 / BD741706

Vex IQ motors are DC motors that have been specifically designed for use with the Vex IQ robotics system. They contain a series of internal components including a rotor (the rotating part of the motor), a stator (the stationary part of the motor), commutator (part of the motor that allows for current to flow to the rotor), brushes (part of the motor that conduct electricity to the commutator), and an axle (the part of the motor that rotates). These components work together to convert electrical energy into mechanical energy, allowing the motor to rotate and provide power to various robotic components.

